PROCEEDINGS

OF THE

AMERICAN PHILOSOPHICAL SOCIETY.

VOL. 1. APRIL, MAY, JUNE, JULY & AUG. 1839. No. 7.

Stated Meeting, April 5.

Present, nineteen members.

Mr. DU PONCEAU, President, in the Chair.

The following donations were received:—

FOR THE LIBRARY.

Diccionario de la Lengua Castellana por la Academia Española. Eighth edition. Madrid, 1837.—*From the Academy.*

Derrotero de las Islas Antillas de las Costas de Tierra-Firme, y de las del Seno Mejicano. Third edition. Madrid, 1837.—*From the Hydrographical Depót of the Spanish Navy.*

Coleccion de los Viages y Descubrimientos que hicieron por mar los Españoles desde fines del Siglo xv. Por Don Martin Fernandez de Navarrete. Vols. I., II., III., IV., & V. Madrid, 1825 to 1837.—*From the same.*

Discurso leido à la Academia de la Historia, por su Director el Excmo Señor D. Martin Fernandez de Navarrete, en Junta de 24 de Noviembre, de 1837. Madrid, 1838.—*From the Author.*

Essays on unexplained Phenomena. By Graham Hutchinson. Glasgow, 1838.—*From the Author.*

Observations on the Justificative Memorial of the Court of London. Translated from the French original, by Peter S. Du Ponceau. Philadelphia, 1781.—*From the Translator.*

An Alphabetical Catalogue of Shells, Fossils, Minerals, and Zoophites, in the Cabinet of Joseph Sullivant. Columbus, Ohio, 1838.—*From Mr. Sullivant.*

The Magazine of Natural History. New Series. Edited by Edward Charlesworth. Vol. II., No. 25. London, 1839.—*From the Editor.*

Communication relative to the West Branch and Alleghany Canal. By B. Aycrigg. Harrisburg, 1839.—*From the Author.*

The American Medical Library and Intelligencer. By Robley Dunglison, M. D. Vol. II. No. 24, and Vol. III., No. 1. Philadelphia, 1839.—*From the Editor.*

The Augustan Age. A Lecture before the Athenian Institute. By Charles D. Meigs, M. D. Philadelphia, 1839.—*From the Author.*

Statistical Tables, exhibiting the Condition and Products of certain branches of Industry in Massachusetts, for the year ending April 1, 1837. By John P. Bigelow. Boston, 1838.—*From Mr. Elliot Cresson.*

Real Museo Borbonico. Nos. 37 to 47. Naples, 1833 to 1836.—*From the King of the Two Sicilies.*

Vocabolario Universale della Lingua Italiana. Nos. 31 to 35. Naples, 1837 and 1838.—*From the Chevalier Morelli.*

The Committee to whom was referred a paper, entitled "Contributions to the Geology of the Tertiary Formations of Virginia. Second Series. By Professor William B. Rogers, and Professor Henry D. Rogers," reported in favour of the publication of the Memoir, which was ordered accordingly.

The object of this communication is to describe the Geology of the Peninsula embraced between the Potomac and Rappahannock rivers, extending from the Chesapeake Bay to the limit of tide water, near Fredericksburg.

This area consists almost exclusively of the two great divisions of the Tertiary Deposites of Virginia, namely, the *Eocene* and *Miocene* formations.

The paper commences with a sketch of the topographical features of the peninsula, making allusion, among other points, to the interesting *terraced* configuration of the land bordering the valleys of the two rivers. It then proceeds to delineate the boundaries of the *Eocene* and *Miocene* formations. The *Eocene* is shown to occupy the western part of the peninsula, overlapping at its western edge the secondary sandstone of Fredericksburg, and extending eastward with a very gentle eastern dip beneath the overlying Miocene deposites,

until it finally disappears below the level of the tide near the mouth of Chingoteague creek on the Rappahannock, and Mathias's Point on the Potomac. The *Miocene* spreads eastward from the line connecting these two localities to the termination of the peninsula; while some of its lower beds extend west of the same line into the Eocene district, where they are confined, however, to the highest portions of the land.

After offering numerous details relating to the range and limits of these two divisions of the Tertiary Deposites, the paper treats in the next place of the arrangement and composition of the *Miocene* strata, which are shown to possess a close general analogy in these respects to the *Miocene* beds of the peninsula of the York and James rivers, described in a former communication. The two most interesting points of agreement are the occurrence of the blue marls low down in the series, and the presence of the thin band of ferruginous rock separating the *Miocene* from the overlying *diluvium*.

In general the blue marl at the base of the Miocene, is the most replete in fossils, though towards the eastern extremity of the peninsula, shells, &c., abound in the upper sands and clays. Usually the *upper* beds of the *Miocene* in this district are destitute of fossils, though full of their casts and impressions.

These strata consist generally of light coloured sandy clays, distinguished by a sulphurous smell, and an acid and styptic flavour. Carbonate of lime is not abundant, but the sulphate of lime occurs sometimes in valuable proportion. Sulphate of iron, sulphate of alumina, free sulphuric acid, sulphur, and even an appreciable amount of sulphate of magnesia are also met with.

The fossil impressions in these beds are beautifully distinct, and appertain to all the species of shells which are found in perfect condition in the subjacent strata. In the blue clayey marl beneath, there often occurs a notable proportion of green sand, which is also found in some of the other Miocene strata, mixed pretty largely with common sand and clay, in beds destitute of fossils.

The paper treats in detail of many of the more interesting localities in the *Miocene* district, describing the stratification, and presenting evidence of the relative fertilizing agency of the several beds.

The fossil species which characterize the *Miocene* strata, are next enumerated.

In the next section, an account is given of the arrangement and composition of the *Eocene* strata of the peninsula.

In general, the lowest bed of the series is a dark greenish-blue mass, composed of clay, fine sand, and a little green sand; while above it, the strata are of various shades, yellow, greenish-gray, and brown. Little uniformity prevails in their arrangement at different localities.

A thin band of ferruginous gravel frequently overlies the *Eocene* strata, and forms a distinct line of demarcation between them and the bottom of the *Miocene*.

The stratification of the Eocene at various localities is exhibited in detail, and the characteristic fossils specified, while the curious chemical changes which these have undergone, are also discussed.

Professor Bache presented the printed number of the Society's proceedings for the past three months, No. 6.

Dr. Hays stated that he had received through a friend some of the vaccine virus, recently obtained by Mr. Estlin, of Bristol, from the cow, and had used it with the most satisfactory results. He exhibited a scab, which presented all the characters described by Jenner, as appertaining to the genuine vaccine scab.

Stated Meeting, April 19.

Present, thirty-eight members.

Mr. Du Ponceau, President, in the Chair.

The following donations were received:—

FOR THE LIBRARY.

Mémoires de l'Académie Impériale des Sciences de Saint-Pétersbourg. VIme. Série. Sciences Mathématiques, Physiques et Naturelles. Vol. IV. Première Partie: Sciences Mathématiques et Physiques. Vol. II. Parts first and second. St. Petersburg, 1838.—*From the Academy.*

Mémoires de l'Académie Impériale des Sciences de Saint-Pétersbourg. VIme. Série. Sciences Mathématiques, Physiques et